

Remarks

The Examiner has rejected independent claim 1 under 35 U.S.C. §102(b) as anticipated by Carlson, U.S. Patent No. 6,376,387. Additionally, the Examiner has rejected independent claim 6 under 35 U.S.C. 35 U.S.C. §103 as obvious over Carlson. These rejections are respectfully traversed.

Novelty

Carlson does not anticipate claim 1 because all of the elements in claim 1 are not shown in this reference. Specifically, Carlson does not disclose purging the transfer and treatment chambers such that, “when the connecting door is opened, a *gas stream flows from the transfer chamber into the treatment chamber and is maintained during loading of the treatment chamber* through the fact that the pressure in the transfer chamber is slightly higher than the pressure in the treatment chamber.”

The Examiner cites Col. 4, In. 24-27 and Fig. 1 as disclosing that the transfer chamber and the treatment (processing) chamber are evacuated and then a connecting door between the transfer chamber and treatment chamber is opened. However, a close examination of these lines reveals a description of *the loadlock chamber 24* (mislabeled “loadlock chamber 18”) being evacuated. See also Col. 4, In. 41-50 (describing evacuation of loadlock chamber (Step 3) prior to the loading of gas into the loadlock chamber (Step 5)). In fact, though the loadlock chamber 24 is sealed off from the other chambers with the closed slitvalves 42 during this evacuation, the transfer chamber 18 and the treatment (processing) chambers 20 are in communication with each other, as the slitvalves 82 are open during this time. See Col. 4, In. 29-31.

Steps 7-10 disclose the opening of the slitvalves 42 (between the loadlock chamber and the transfer chamber), moving the wafers from loadlock chamber to transfer chamber to processing chambers, closing of slitvalves 82 (between the transfer

chamber and processing chambers), and processing of the wafers in the processing chambers. See Col. 4, ln. 51 – Col. 5, ln. 4. It is not until *after* both this loading and processing of the wafers into the treatment (process) chamber 20 that the processing chamber 20 is loaded with hydrogen gas to purge it. See Col. 5, ln. 5-8 (Step 11). Nowhere does Carlson disclose the evacuation and gas loading and purging of the transfer and treatment chambers as claimed in claim 1 of the present invention in order to build up a gas stream from the transfer chamber to the treatment chamber (resulting from the pressure differential between the two chambers) during the loading of the wafers into the treatment chamber.

Obviousness

Additionally, claim 1 is not obvious over Carlson, as there is no suggestion or motivation for one skilled in the art to make this modification. This is an important feature of the invention, as it is necessary to avoid cross-contamination between different treatment chambers (i.e., UHV-process chamber and MOCVD-process chamber). Carlson, however, does not even disclose different types of chambers that would require attending to the problem of cross-contamination, and thus, Carlson would not suggest to one skilled in the art that this modification would be desirable.

Similarly, claim 6 is also not obvious over Carlson. Specifically, claim 6 requires that “the *transfer chamber* is flooded with an inert gas before the connecting door associated with the treatment chamber is opened, the *pressure difference* between the transfer chamber and the treatment chamber being maintained” by varying the evacuation power. As discussed above, Carlson does not disclose flooding the *transfer* chamber and maintaining a pressure difference between it and the treatment chamber. As previously noted, this is an important aspect of the invention in order to produce a gas stream into the treatment chamber during loading so as to prevent cross-contamination between different treatment chambers.

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Response to Official Action

It is respectfully submitted that claims 1-14, all of the claims remaining in the application, are in order for allowance, and early notice to that effect is respectfully requested.

Respectfully submitted,



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